Optimal Solutions for the Future

DNM 350/5AX

5-axis Vertical Machining Center

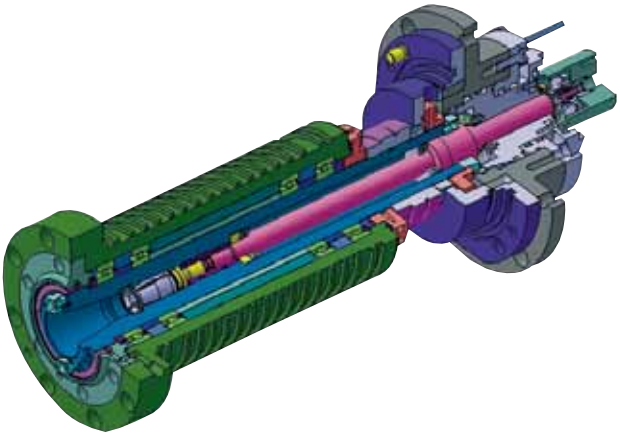
Main Spindle

The DNM 350/5AX is equipped with a High-rigid, High-speed spindle. Designed for a wide range of applications, including heavy cutting and difficult workpiece shapes.

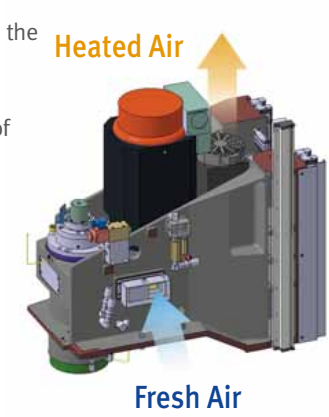
Spindle Speed

Max. Spindle Speed **12000** r/min

Spindle Motor Power **15/11** kW (14.8/20.1 Hp)

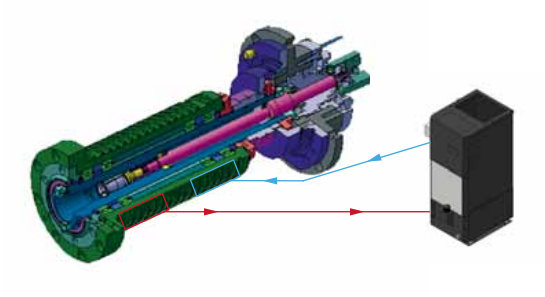


Heated air is forced from the casting and replaced by cooler fresh air.
This minimizes the risk of thermal deformation



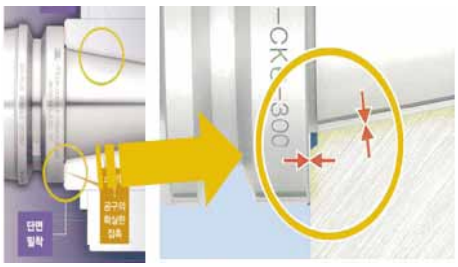
Spindle head cooling system std.

The cooler keeps the cooling oil at a constant temperature.
The oil circulates around the spindle and bearings to minimize thermal deformation of the spindle.



Dual contact system (Big plus) std.

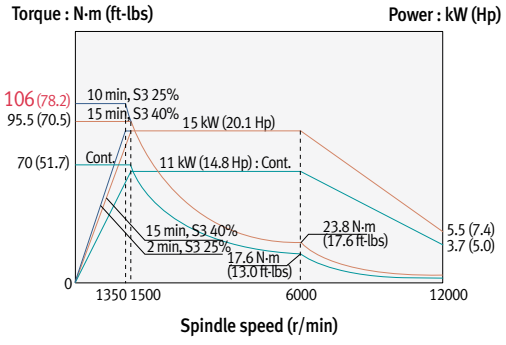
The dual contact system offers simultaneous contact between the machine spindle face and toolholder flange face.



Spindle power torque diagram

Max. spindle speed
12000 r/min

Spindle motor power
15/11 kW (20.1/14.8 Hp)

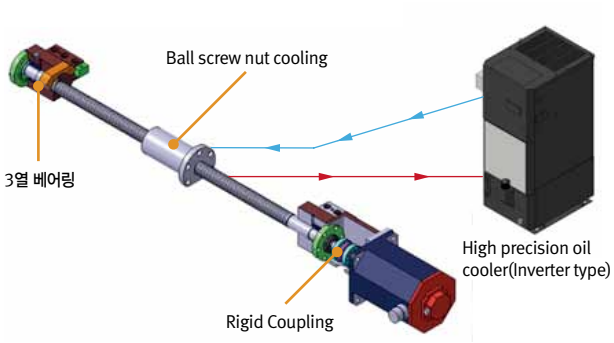


Machine Structure

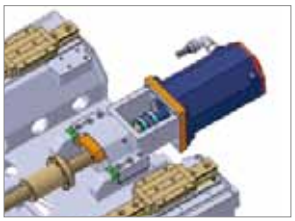
The DNM 350/5AX provides High-precision machining using a stable structure created by FEM analysis.

High Rigidity Body

This machine provides High precision and speed by High-stiffness Roller Type LMG, Rigid coupling and ball screw nut cooling system.



High-Strength Roller LMG



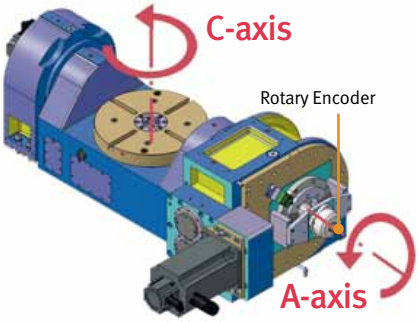
• High-stiffness Roller Type LMG, Ball Screw & Coupling

• Strong 45 size roller type linear guide way

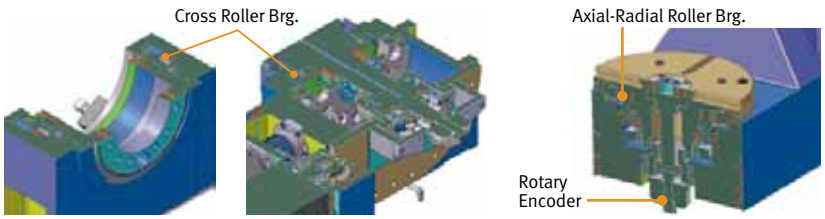
Rotary Table

High-precision and high-stiffness

- Applied Axial Radial Roller Cross bearing with High-precision and high-stiffness
- Applied double worm & pinion gear for reduced backlash
- Applied High-precision rotary encoders (A/C axis)

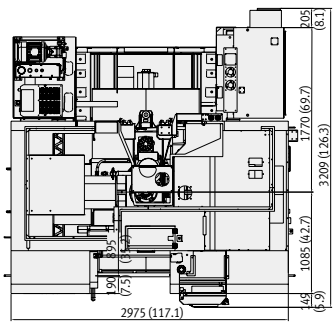


Structure A-axis (Left) | **Structure A-axis (Right)** | **Structure C-axis**



External Dimensions

Top View



Front View

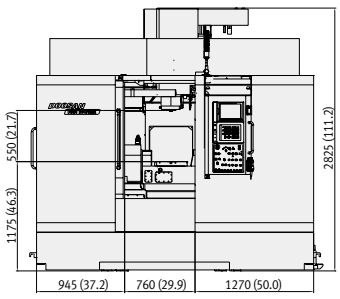
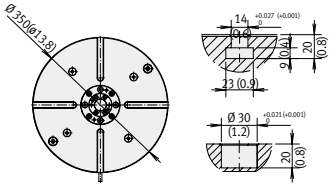


Table Dimension

Unit : mm (inch)



Machine Specifications

	Features	Unit	Fanuc i series (Simultaneous 4+1 axis)
Travels	X/Y/Z axis	mm (inch)	600 / 655 / 500 (23.6 / 25.8 / 19.7)
	A/C axis	deg	+30 ~ -120 / 360
Feedrate	X/Y/Z axis	m/min (ipm)	36 / 36 / 30 (1417.7 / 1417.3 / 1181.1)
	A/C axis	r/min	20/30
Table	Table size	mm (inch)	ø 350 (ø 13.8)
Workpiece	Max. workpiece swing (dia. x height)	mm (inch)	ø 400 x 335 (ø 15.7 x 13.2)
	Table loading capacity	kg (lb)	250 (551.1)
Main spindle	Power Transmission	-	Belt
	Spindle taper	-	#40-BT / CAT / DIN 40
	Max. spindle speed	r/min	12000
	Spindle motor	kW (Hp)	11 / 15 (14.8 / 20.1)
	Max. spindle torque	N·m (ft-lbs)	106 (78.2)
ATC	Tool storage capacity	ea	30 {40,60}
	Max. tool length	mm (inch)	270 (10.6)
	Max. tool weight	kg (lb)	8 (17.6)
	Tool change time (Tool to Tool)	s	1.3
NC controller	Display unit	inch	10.4"

- The specifications and information above-mentioned may be changed without prior notice.
- For more details, please contact Doosan

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Standard Feature

- Air gun
- Assembly & operation tools
- Coolant tank & chip pan
- Door interlock
- Flood coolant system
- Full enclosure Splash guard
- Installation parts
- Portable MPG
- Screw conveyor
- Signal tower (yellow, red, green)
- Spindle air curtain
- Spindle head cooling system
- Work light

Optional Feature

- A/C axis encorder
- Air blower
- Automatic tool measurement (TS27R) (4 +1 axis only)
- Chip conveyor and chip bucket
- Hydraulic fixture interface
- Linear scale (X, Y, Z axis)
- Mist collector
- MQL system
- Oil skimmer
- Spindle Thermal compensation
- Test bar
- Through spindle coolant

NC Unit Specifications Doosan Fanuc i series

AXES CONTROL	
- Controlled axes	5 (X,Y,Z,C,A)
- Simultaneously controllable axes	Positioning (G00) / Linear interpolation (G01) : 4 axes Circular interpolation (G02, G03) : 2 axes
- Backlash compensation	
- Least command increment	0.001mm
- Machine lock	all axes/Z axis
- Mirror image	Reverse axis movement (setting screen and M-function)
- Stored pitch error compensation	Pitch error offset compensation for each axis

INTERPOLATION & FEED FUNCTION	
- 2nd reference point return	G30
- Circular interpolation	G02, G03
- Cylindrical interpolation	G07.1
- Exact stop check	G09, G61 (mode)
- Feed per minute	
- Feedrate override (10% increments)	0-200 %
- Helical interpolation	
- Manual handle feed	1 units
- Manual handle feedrate	0.1/0.01/0.001 mm
- Override cancel	M48 / M49
- Rapid traverse override	F0 (fine feed), 25 / 50 / 100 %
- Reference point return	G27, G28, G29
- Skip function	G31
- AICC II (AI Contour Control II)	200 block preview

SPINDLE & M-CODE FUNCTION	
- Spindle orientation	
- Spindle speed command	S5 digits
- Spindle speed override (10% increments)	10 - 150 %

TOOL FUNCTION	
- Tool nose radius compensation	G40, G41, G42
- Number of tool offsets	400 ea
- Tool length compensation	G43, G44, G49
- Tool life management	128 sets
- Tool number command	T2 digits
- Tool position offset	G45 - G48
- Tool offset memory C	Geometry / Wear and Length / Radius offset memory

TOOL FUNCTIONPROGRAMMING & EDITING FUNCTION	
- Background editing	
- Canned cycle	G73, G74, G76, G80 - G89, G99
- Circular interpolation by radius programming	
- Extended part program editing	
- Local / Machine coordinate system	G52 / G53
- Maximum commandable value	±99,999.999 mm
- No. of Registered programs	400 ea
- Part program storage	1280m
- Rigid tapping	
- Thread cutting	G84, G74
- Work coordinate system	G54 - G59

OTHERS FUNCTIONS (Operation, Setting & Display, etc)	
- 3rd / 4th reference return	
- Additional work coordinate system	G54.1 P1 - 48 (48 pairs)
- Automatic corner override	G62
- Coordinate rotation	G68, G69
- Dry run	
- Graphic display	Tool path drawing
- Loadmeter display	
- MDI / DISPLAY unit	10.4" Color TFT LCD, keyboard for data input, soft-keys
- Optional angle chamfering / corner R	
- Polar coordinate command	G15 / G16
- Program restart	
- Programmable data input	Tool offset and work offset are entered by G10, G11
- Programmable mirror image	G50.1 / G51.1
- Run hour and part number display	
- Scaling	G50, G51
- Single direction positioning	G60
- Stored stroke check 2	
- Embedded Ethernet	

OTHERS FUNCTIONS (Operation, Setting & Display, etc)	
- Fast data server	
- Dynamic graphic display (w/10.4" Color TFT LCD)	Machining profile drawing

Optimal Solutions for the Future

http://www.doosaninfracore.com/machinetools/

Doosan Infracore
Machine Tools

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